AMENDMENT AND RESPONSE UNDER 37 CFR § 1.116 – EXPEDITED PROCEDURE

Serial Number: 10/700,368

Filing Date: November 3, 2003

Title: MULTI-SITE VENTRICULAR PACING THERAPY WITH PARASYMPATHETIC STIMULATION

## IN THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) An implantable device for delivering cardiac function therapy to a patient, comprising:

a plurality of pacing channels for delivering pacing pulses to multiple ventricular sites;

a parasympathetic stimulation channel for stimulating parasympathetic nerves innervating the heart;

## a sensor for measuring cardiac output;

a controller for controlling the delivery of pacing pulses to the multiple ventricular sites in accordance with a programmed pacing mode;

wherein the controller is programmed to deliver multi-site ventricular pacing therapy in conjunction with parasympathetic stimulation for reducing ventricular wall stress; and,

wherein the controller is further programmed to deliver the multi-site ventricular pacing in accordance with a demand pacing mode that prevents slowing of the heart rate <u>below a</u>

\*\*\* specified minimum value due to the parasympathetic stimulation; and,

wherein the controller is further programmed to modulate the delivery of parasympathetic stimulation in accordance with the measured cardiac output.

- 2. (Cancelled)
- 3. (Currently Amended) The device of claim [[2]] 1 wherein the cardiac output sensor is a trans-throracic impedance measuring circuit.
- 4. (Currently Amended) The device of claim [[2]] 1 wherein the controller is programmed to deliver parasympathetic stimulation only when cardiac output is above a specified limit value.
- 5. (Original) The device of claim 1 further comprising an exertion level sensor for measuring the patient's exertion level and wherein the controller is programmed to modulate the delivery of parasympathetic stimulation in accordance with the measured exertion level.

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6. (Original) The device of claim 5 wherein the controller is programmed to deliver parasympathetic stimulation only when the measured exertion level is below a specified limit value.

7. (Currently Amended) The device of claim 1 further comprising:
an exertion level sensor for measuring the patient's exertion level;
a sensor for measuring cardiac output; and,

wherein the controller is programmed to modulate the delivery of parasympathetic stimulation in accordance with <u>a parameter computed from</u> the measured exertion level and measured cardiac output <u>that indicates the adequacy of the cardiac output</u>.

- 8. (Original) The device of claim 7 wherein the controller is programmed to deliver parasympathetic stimulation only when a computed function of the currently measured cardiac output and exertion level indicates that cardiac output is adequate.
- 9. (Original) The device of claim 5 wherein the exertion level sensor is a minute ventilation sensor.
- 10. (Original) The device of claim 5 wherein the exertion level sensor is an accelerometer.
- 11. (Currently Amended) A method for operating an implantable cardiac device in order to deliver therapy to a patient, comprising:

stimulating parasympathetic nerves innervating the heart in order to reduce ventricular wall stress; and,

delivering pacing pulses to multiple ventricular sites in accordance with a demand pacing mode that prevents slowing of the heart rate <u>below a specified minimum value</u> due to the parasympathetic stimulation; and,

measuring cardiac output and modulating the delivery of parasympathetic stimulation in accordance with the measured cardiac output.

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12. (Cancelled)

13. (Currently Amended) The method of claim [[12]] 11 further comprising measuring cardiac output sensor by measuring trans-throracic impedance.

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- 14. (Currently Amended) The method of claim [[12]] 11 further comprising delivering parasympathetic stimulation only when cardiac output is above a specified limit value.
- 15. (Original) The method of claim 11 further comprising measuring the patient's exertion level and modulating the delivery of parasympathetic stimulation in accordance with the measured exertion level.
- 16. (Original) The method of claim 15 further comprising delivering parasympathetic stimulation only when the measured exertion level is below a specified limit value.
- 17. (Currently Amended) The method of claim 11 further comprising:

  measuring the patient's exertion level;

  measuring cardiac output; and,

modulating the delivery of parasympathetic stimulation in accordance with <u>a parameter</u> <u>computed from</u> the measured exertion level and measured cardiac output <u>that indicates the</u> <u>adequacy of the cardiac output</u>.

- 18. (Original) The method of claim 17 further comprising delivering parasympathetic stimulation only when a computed function of the currently measured cardiac output and exertion level indicates that cardiac output is adequate.
- 19. (Original) The method of claim 15 further comprising measuring the exertion level by measuring minute ventilation.

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20. (Original) The method of claim 15 further comprising measuring the exertion level by measuring body acceleration.